Missouri's Employment Outlook

2008–2018

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MISSOURI
Department of Economic Development

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About Projections Data

The Missouri Economic Research and Information Center's (MERIC) Projections Group estimates the growth and decline in jobs, output, and labor force over time. A principle use of this information is to help individuals choose careers and help education and training officials understand future workforce needs.

This report presents an overview of the 2008-2018 projections. The projections cover Missouri as a whole, and its ten different sub-state regions. Sub-state regions for the long term projections are based on the state's Workforce Investment Areas with aggregate regions created for the Kansas City and St. Louis metropolitan regions.

Employment projections give an overview of where the Missouri economy may be headed based on past and present trends. The purpose is to offer some insight into questions regarding the future growth or decline of industries and occupations. The projections' estimates assume a long-run, full-employment economy and should not be used as a measure of employment gaps. The employment projections produced by MERIC are not unconditional predictions of the future. They are probability statements about future activity in various industry and occupational sectors of Missouri's economy. Government policies, corporate decisions, economic swings and natural or man-made disasters are only a few of the factors that can cause change to employment in a particular industry or occupation in a totally unexpected way.

Employment Projections can be used by individuals and counselors for career guidance. Projections data can also be used by planners to determine the need for education and training courses, as well as by developers for regional planning to target industries and occupations.

The Projections Process

MERIC develops both industry and occupational employment projections. Industries refer to where people work, such as factories, farms, grocery stores, hospitals, schools, government offices, and banks. In fact MERIC develops projections for just over 300 detailed industries at the statewide level. Occupations refer to what people do, such as welders, carpenters, and accountants. For the state, MERIC develops projections for about 770 detailed occupations.

The projections program is federally funded through the Employment and Training Administration, an agency within the U.S. Department of Labor. ETA funds the projections program in all 50 states.

MERIC actually develops two different sets of projections on a regular basis. Short-term projections are developed each year and are on a two-year horizon. The current 2009-2011 short-term projections are developed at a statewide basis with estimates for two sub-state regions, Kansas City and St. Louis Metropolitan regions.

Long-term projections cover a 10-year period and are developed every other year. Projections are developed for the state and 10 sub-state areas. The most current long-term state wide projections are for the 2008-2018 period. The 10 sub-state areas are based on the Workforce Investment Areas which were established under the federal Workforce Investment Act of 1998. The two exceptions are the Kansas City area which includes the Kansas City Vicinity and East Jackson County Workforce Investment Areas and the St. Louis area which includes St. Charles, St. Louis City, St. Louis County, and Jefferson/Franklin Consortium Workforce Investment Areas.

Sub-state Areas for Long-term Projections

Developing employment projections is a four step process. First, MERIC gathers historic industry employment to identify trends. Second, using these trends and other factors, MERIC projects the industry employment into the future. Third, at the same time, MERIC collects occupational employment within industries which is referred to as staffing patterns. Finally, once MERIC has the industry projections and these staffing patterns we produce occupational employment projections.

Industry Projections

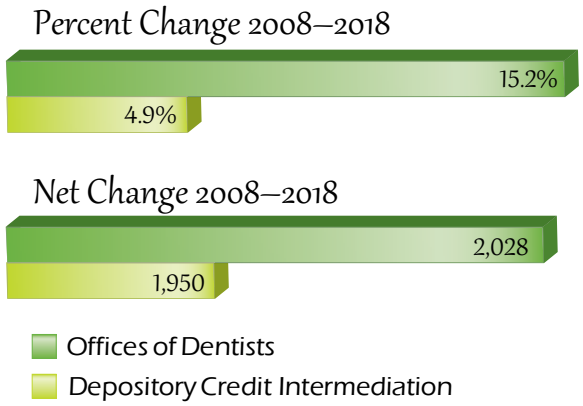
The source for the historic industry employment is the U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages. This employment comes from the Unemployment Insurance Program that is led by the Missouri Department of Labor and Industrial Relations. This employment data is by place of work down to the county level and represents the number of jobs in an area. Although the employment data from the UI program covers most of the non-farm employment in the state, MERIC supplements it with additional employment including self-employed, agriculture, religious organizations, and railroads. The industries are classified using the North American Industry Classification System.

To project industry employment in the short-term there are several different types of modeling techniques used including: trend analysis, VAR, BVAR, regression analysis, and ARIMA. For the long-term projections trends, shift share modeling, and regression analysis are used. The national explanatory factors MERIC uses in the short-term models include new unemployment insurance claims, a composite index of the 10 leading indicators, consumer expectations, interest rate spread, money supply, and total non-farm employment. The explanatory factors used in the long-term models include national industry projections, population projections and personal income projections.

The final product from all of this is:

- Base year industry employment
- Projected year employment
- Numeric change (difference between the base and projected year employment)
- Percent change (numeric change expressed as a percent)

It is recommended that the numeric change and percent change are viewed together. Viewed separately they may give an unrealistic outlook for the industry. In some cases a percent change may be quite high but the numeric change is small. Also in some cases the numeric change may be large but the percent change is low. As you can see with the case of Offices of Dentists and Depository Credit Intermediation Industries, the difference in numeric change between the two industries is less than 80 employees, but the percentage change is shown as more than a 10% difference.



Industry/Occupational Staffing Patterns

With occupational projections, the occupations within industries (staffing patterns) are obtained through the Occupational Employment Statistics Survey, which is conducted by MERIC staff. This survey is a U.S. Bureau of Labor Statistics and state cooperative program. The Bureau of Labor Statistics funds this survey in all 50 states. This program surveys a sample of the businesses that are covered by the unemployment insurance program. In Missouri, about 30,000 establishments out of about 188,000 are surveyed over a three-year period. The information received from this survey

Legal Services, All Occupations	**100.0%**
Lawyers	31.7%
Paralegals & Legal Assistants	11.9%
Law Clerks	1.2%
Title Examiners, Abstractors & Searchers	2.6%
Supervisors of Office Workers	1.7%
Bookkeeping & Accounting Clerks	1.7%
File Clerks	3.3%
Receptionists	4.7%
Executive Secretaries	1.3%
Legal Secretaries	18.0%
Secretaries, Excl. Legal, Medical & Executive	2.1%
General Office Clerks	4.0%
All other occupations	15.8%

includes employment and wages by occupation. The projections program uses the occupational employment within industries or staffing patterns data that is developed from the survey.

This is an example of a staffing pattern. Legal Services is a detailed industry for which MERIC makes a projection. The staffing pattern for this industry shows that almost 32 percent employed in the industry are lawyers. About 12 percent employed in the legal services industry are paralegals and legal assistants. Only 1.2 percent employed are law clerks.

Occupational Projections

To obtain the occupational employment projections, staffing patterns are applied to the base and projected year industry employment. Because occupational employment changes over time and is not static, adjustments are made to the staffing patterns to predict future staffing needs. Factors provided by the Bureau of Labor Statistics are used to make these adjustments. These factors tell whether an occupation is growing , declining, or is not changing in importance as an industry.

For example, in the 1990's several clerical occupations were declining in importance in many industries due to the use of personal computers and the software used on them. But at the same time computer-related occupations were growing in importance in many industries because of the same technology.

Also estimated are the number of openings that are expected to occur in each occupation over the projection period. There are two sources of openings that are estimated. The first, openings due to growth, are the numeric change in additional employment expected over the projections period. The second and equally important source of openings is net replacement openings. These openings occur when workers leave the labor force or change occupations. Workers leave the labor force for many reasons including retirement, death or disability, promotions, changing careers, or completing their education. Again information provided by the Bureau of Labor Statistics allows MERIC to make estimates of these job openings. Generally replacement openings in highly skilled and highly paid occupations are due to retirement while replacement openings in lower skilled and lower paid occupations us usually the result of people leaving the occupation after gaining work experience or completing their education. In the next 10 to 20 years openings due to retirement should increase as the baby boom generation reaches retirement age.

The final product for the occupational projections includes:

- Base year employment
- Projected year employment
- Numeric change (difference between the base and projected year employment)
- Percent change (numeric change expressed as a percent)

MERIC publishes the openings from growth and replacements. Again, it is recommended that the numeric change, percent change, and the openings are viewed together. Viewed separately, they can give an unrealistic outlook for the occupation.

Additionally, MERIC assigns nationally defined education and training categories to the occupations. There are 11 categories ranging from short-term on-the-job training, which requires less than a month of on-the-job training, to professional degrees needed in occupations such as doctors, lawyers, and dentists. These education categories should not be viewed as requirements for the jobs but as the usual pathway to enter a job. For example, a bachelor's degree in business management can lead to a job as an manager but not all managers have degrees.

MERIC also assigns grades to the occupational data to easily assess an occupation's outlook. Occupational grades are based on a 15 point scale derived from a standardized index of total openings, percent change, and average annual wages over the 10 year projections horizon. Grades range from an "A+" for significantly high wages, growth, and openings to an "F-" for significantly low wages, growth, and openings.

Industrial Highlights

Missouri's economy is projected to generate more than 105 thousand jobs over the 2008-2018 period—an 3.9 percent increase, which is slightly lower than the 5.8 percent increase of the previous 10-year period. Wage and salary jobs—projected to increase by 3.2 percent—will account for all of the projected increase.

The number of jobs for self-employed and unpaid family workers is projected to decrease by about 4,200, or -2.3 percent, significantly less than the 3.2 percent projected growth in jobs for wage and salaried workers.

Non-farm, service-providing industries are expected to continue to account for most jobs and most of the over 135,000 jobs due to be added during the projections decade. This is due, in part, to the increasing demand for services and the difficulty of automating many service tasks. Non-farm, goods-producing industries are expected to decrease number of jobs by over 35,000 between 2008 and 2018. The Goods-producing employment is affected significantly by the current business cycle (economic recessions and expansions).

In 2008, Service-providing industries make up over 83 percent of Missouri's employment. The industries are expected to grow to almost 87 percent of Missouri's total employment by 2018.

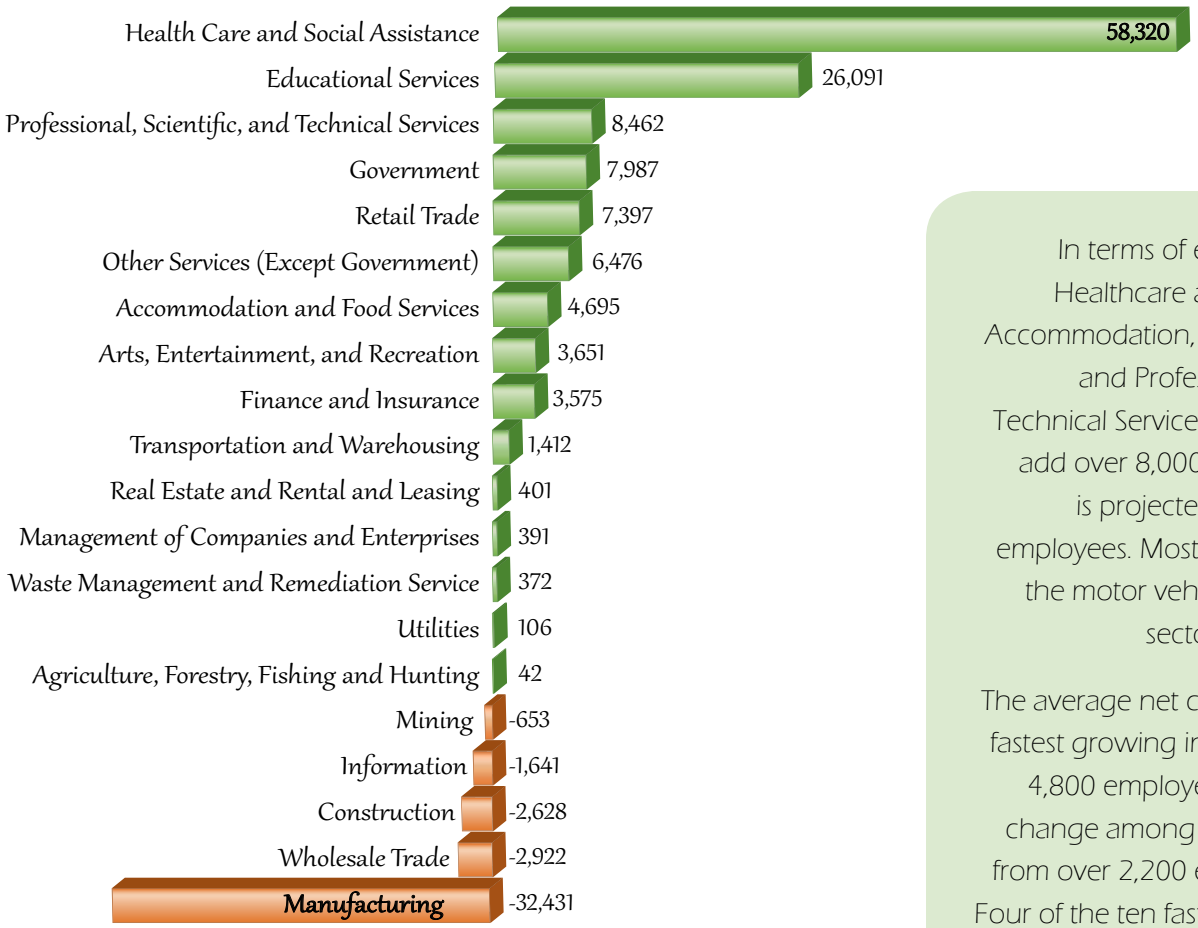
The Health Care and Social Assistance and Retail industry super sectors alone encompassed over 25 percent of Missouri's employment in 2008.

Goods and Service-Providing Employment
2008–2018

Wage and salary employment is defined differently from total employment as it does not include self-employed and unpaid family workers in the workforce.

Missouri Employment–2008

Wage & Salary Employment by Industry Sector
2008–2018



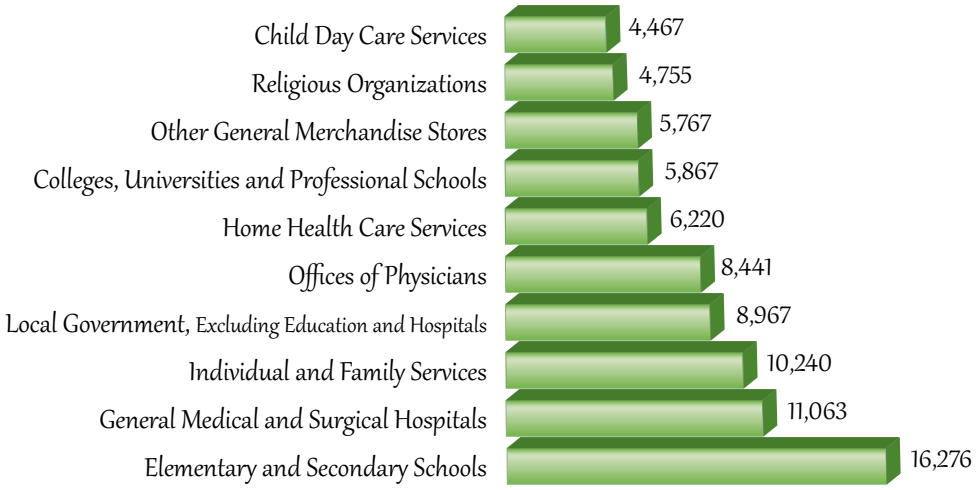
In terms of employment change, Healthcare and Social Assistance, Accommodation, Educational Services, and Professional, Scientific, and Technical Services each is projected to add over 8,000 jobs. Manufacturing is projected to lose over 32,000 employees. Most of these losses are in the motor vehicle and printing sub-sectors of manufacturing.

The average net change for the top 10 fastest growing industries is just below 4,800 employees. The employment change among the industries ranges from over 2,200 employees to 10,200. Four of the ten fastest-growing detailed industries over 2008-18 are related to health-care services which continue to grow due to the aging population and its lack of automation for services.

Top 10 Fastest Growing Industries
2008–2018
(with employment of at least 8,000 in 2008)

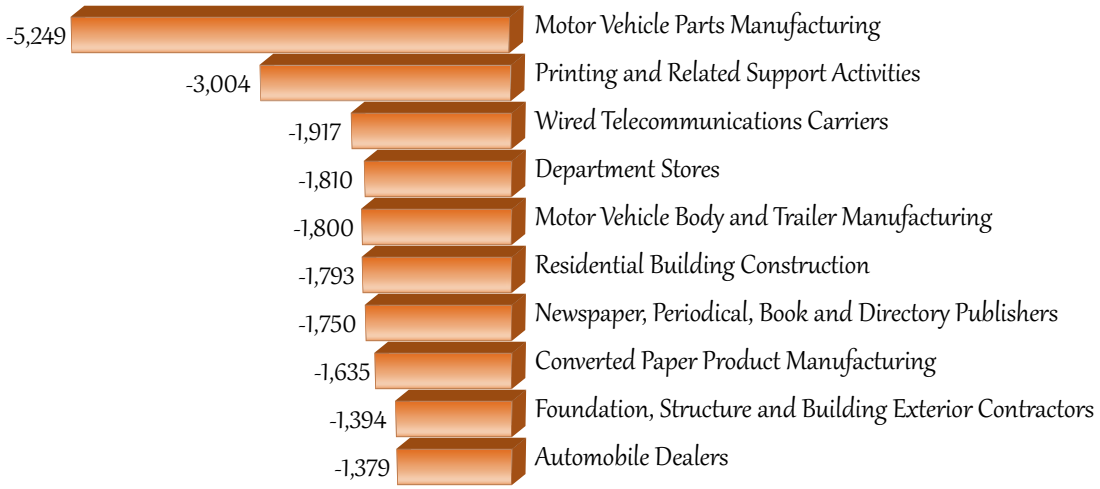
The top ten industries for largest growth will have a 13 percent increase in employment between 2008 and 2018. Public school systems will continue to need workers as its aging workforce reaches employment services reflects industries' greater reliance on temporary and contract workers. The aging of the population is reflected in these numbers as well, with three of the top ten industries related to health-care showing large increases in offices of physicians and general medical and surgical hospitals, and home health care services.

Top 10 Largest Growth Industries
Projected 2008–2018



Several of the fastest declining industries are in manufacturing, but two of the fastest are in the service sector industry - printing services and publishing, which is due to the increase in the availability of home and private publishing software as well as new technologies that make the industry more obsolete. Three of the top ten industries with the most losses are related to motor vehicle manufacturing and retail which is due to the large layoffs and setbacks of the automotive industry within Missouri.

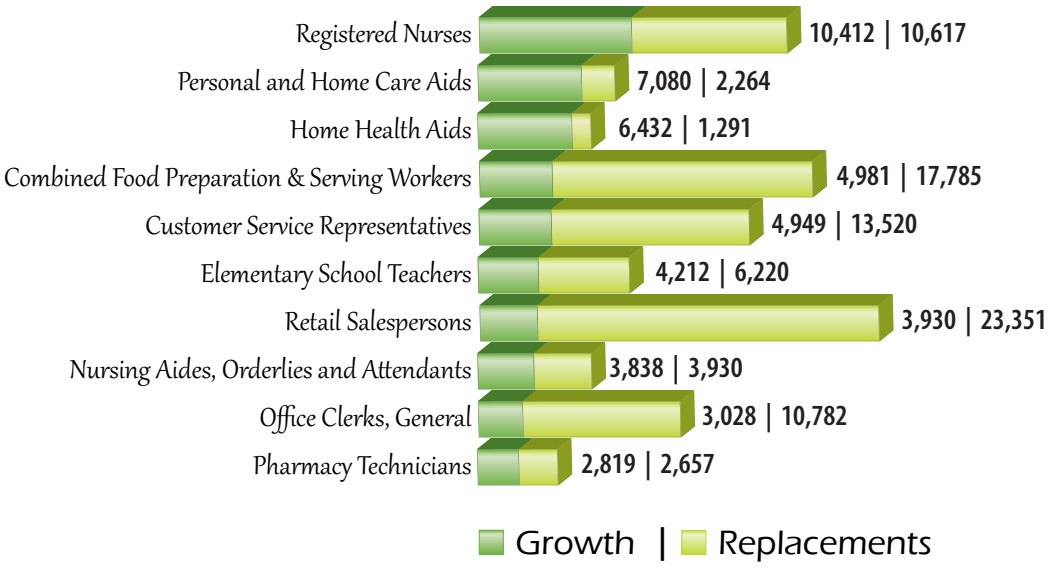
Industries with Most Projected Job Losses



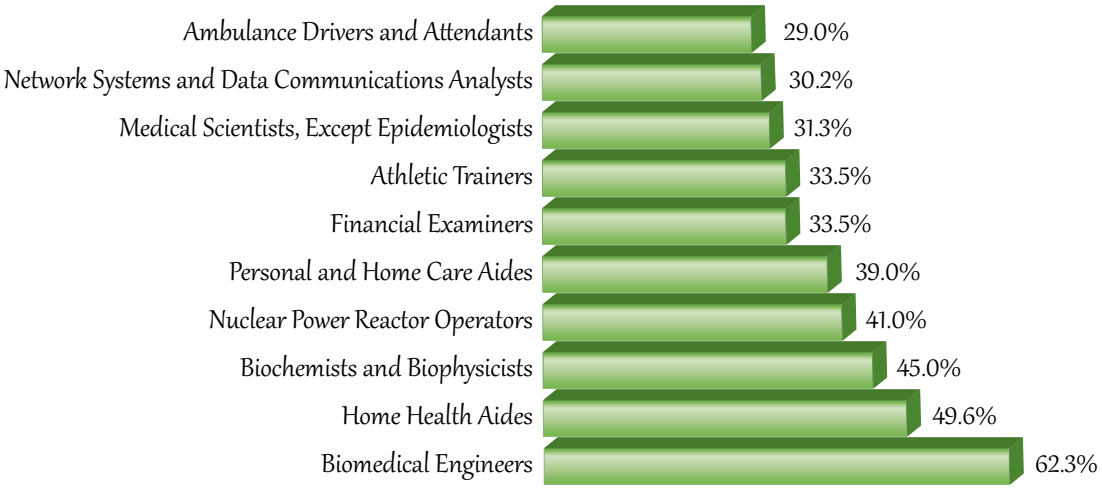
Occupational Highlights

New jobs created as employment grows are only one source of job openings. In most occupations, more job openings are created when workers permanently leave the occupation and must be replaced. While most replacement openings over the next 10 years will continue to be due to workers retiring or shifting to a different occupation, other replacement openings are due to the high numbers of high school and college part-time workers, such as retail salespersons and combined food preparation & serving workers, who need to be replaced when the students leave to find permanent employment.

Occupations with Most Growth Openings
2008–2018



Occupations with the Fastest Projected Growth
2008–2018



The top ten occupations with the fastest projected growth have an average increase in employment by 41%. The total openings for these occupations range from 60 employees to over 9,300. Four of the ten fastest growing occupations in Missouri are health-care related while the remaining industries are a spread amongst IT, finance, and research.

Occupational employment declines generally stem from changes in technology or business practices, or declines in industries in which the occupation is concentrated. Declining employment in the manufacturing industry is the major cause of the projected decline for assemblers and fabricators. Office automation will cause rapid declines in employment for secretaries and shipping, receiving, and traffic clerks.

Top Declining Occupational Employment

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